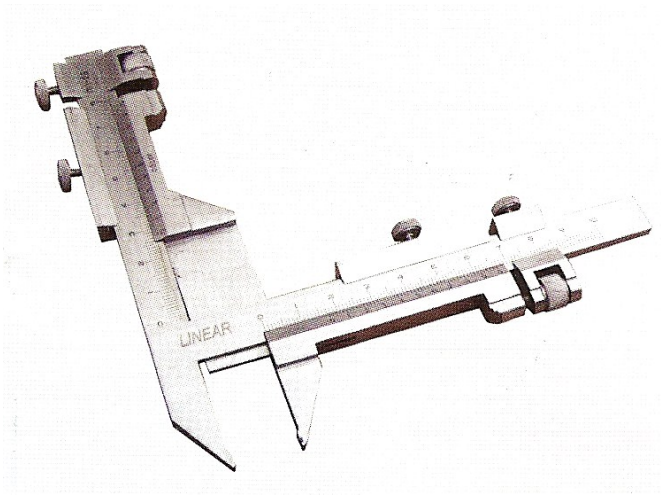
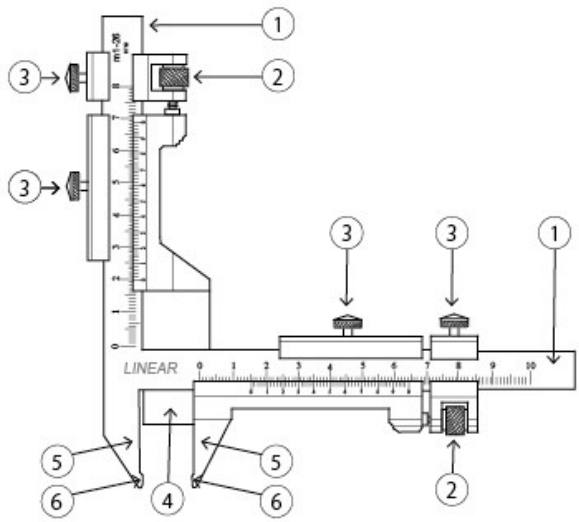
Mechanical Gear Tooth Caliper: 51-400-126



Gear Tooth Caliper for measuring the chordal thickness of gear teeth at the pitch diameter line
Suitable for gear modules from 1 – 26
Tungsten Carbide measuring tips
Resolution: 0.02mm

Packed Weight and Dimensions

Code	Description	Weight g	W mm	H mm	L mm
51-400-126	Mechanical Gear Tooth Caliper 150mm / 6”	407	148	25	210



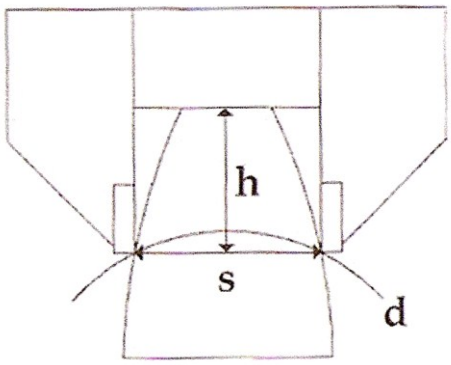
Caliper Parts:

1 Caliper Beam
2 Fine Adjustment Carriage
3 Locking Screw
4 Depth Setting Blade
5 Thickness Measuring Blades
6 Tungsten Carbide Measuring Tips

Code	Range	Resolution	Repeatability
51-400-126	M1 - 30	0.01mm / 0.0005”	0.01mm / 0.0005”

Accuracy
±0.03mm (≤ 100mm)

Code	Gear Measurement Range	Caliper Range Width	Caliper Range Depth
49-400-126	M1 - 30	45mm	28mm



S = Chordal Thickness
h = Depth of Pitch Diameter

Following initial checking of callipers origins (see below)
Set vertical slide to Depth of Pitch Diameter (h) and lock in place with the clamping screw

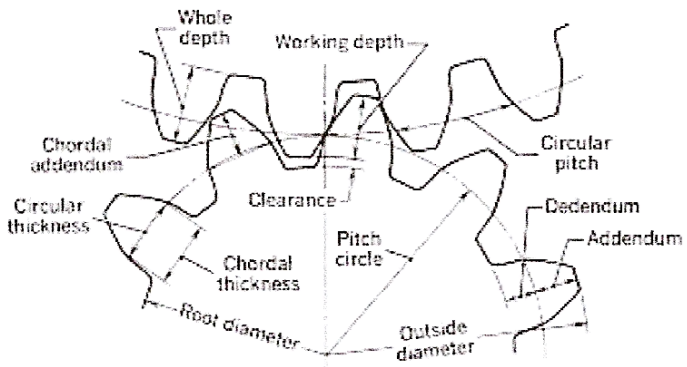
Place calliper down over the gear tooth and sit the Depth Setting Blade on top of the gear tooth
Close and adjust the horizontal calliper across the cord of the gear tooth, lock the calliper in place and remove to read the measurement on the vernier scale

OPERATING INSTRUCTIONS

When using the Caliper for the first time or after a period of non-use, wipe the beam scale with a dry clean cloth to remove any condensation or oil deposits.

Prior to setting the caliper for measuring, first clean the measuring faces with a soft clean cloth or paper.
Open the horizontal calliper anvils approximately 18 -20mm
Place the measuring tips onto a flat surface
Push vertical Depth Setting Blade down onto the flat surface
Push horizontal calliper anvils together and set to zero in this position
The calliper is now ready to set the vertical slide to the depth of the Pitch Diameter and then measure the chord thickness using the horizontal calliper (as above)

Useful Information



FOR DETERMINING THE DIMENSIONS OF GEARS BY METRIC PITCH

Module is the pitch diameter in millimetres divided by the number of teeth in the gear.
Pitch diameter in millimetres is the Module multiplied by the number of teeth in the gear.

M = Module.
D′ = The pitch diameter of gear in millimetres.
D = The whole diameter of gear in millimetres.
N = The number of teeth in gear.
D″ = The working depth of teeth.
t = Thickness of teeth on pitch line.
f = Amount added to depth for clearance.

$M = \frac{D'}{N}$ or $\frac{D}{N+2}$
$D' = NM$
$D = (N + 2)\,M$
$N = \frac{D'}{M}$ or $\frac{D}{M} - 2$
$D'' = 2M$
$t = 1.5708M$
$f = \frac{1.5708M}{10} = 0.157M$

The Module is equal to the addendum, measured in millimetres and parts of millimetres.